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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,814	11/29/2001	Shuji Doi	Q67430	9735

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SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, NW  
Washington, DC 20037-3213

EXAMINER
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YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/995,814

Applicant(s)

DOI ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. This Office action is in response to applicant's amendment filed February 09, 2006, which amends claims 1, 3-7 and 18, and cancels claim 2.

Claims 1 and 3-27 are pending.

2. Claims 1, 3 and 6-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

For claims 1, 3 and 6-27, the scope of groups represented by formulae (2) to (7) as excluded for  $Ar_2$  of formula (8) is not commensurate in scope with the excluded groups as set forth in the original disclosure. Present claim 1 does not define  $R_{23}$ - $R_{29}$  with respect to the excluded groups, and contains a different definition for  $X_{11}$ - $X_{13}$ ,  $R_{21}$ ,  $R_{22}$  and  $R_{30}$  than set forth with respect to the originally excluded groups. Accordingly, the polymeric fluorescent substance defined in claim 1, with claims 3 and 6-27 dependent therefrom, encompasses polymers outside the scope of the original disclosure.

3. Claims 1, 3 and 6-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

$R_{23}$ - $R_{29}$ , which are variables of the groups excluded for  $Ar_2$ , are not defined.

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 3-27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (US 6,361,887 B1) for reasons of record in the Office action mailed August 09, 2005.

6. Claims 1 and 3-27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi et al. (EP 1 043 382 A2) for reasons of record in the Office action mailed August 09, 2005.

7. Applicant's arguments filed February 09, 2006 have been fully considered but they are not persuasive.

With respect to the rejection based on Shi et al., applicant argues that Shi's polymers comprise 9,10-di-(2-naphthyl)anthracene whereas the naphthalene unit represented by formula (4) in claim 1 is not required to be used together with an anthracene group, and the naphthalene unit is usually randomly distributed in the polymer main chain. These arguments are not persuasive. The present claim language does not exclude anthracene groups and/or the 9,10-di-(2-naphthyl)anthracene groups of Shi's polymers. The distribution of repeating units of formula

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(1), formula (8), and any other repeating units which may be present in the polymer in view of the open claim language, may or may not be random.

Applicant further argues that Shi does not concretely teach the alkoxyaryl substituent on the naphthyl group. The examiner agrees that Shi et al. do not provide a specific example of a polymer in which a naphthylene group is substituted with an alkoxyphenyl substituent as required by the present claims. However, a specific alkoxyphenyl substituent is named among the preferences taught by Shi et al. for  $R_3$  and  $R_4$ , and  $R_3$  and  $R_4$  are substituents on the naphthylene groups.

With respect to the rejection based on Noguchi et al., applicant argues that Noguchi does not disclose a naphthylene group having an alkoxyaryl substituent. The examiner agrees that Noguchi et al. do not provide a specific example of a polymer in which a naphthylene group is substituted with an alkoxyphenyl substituent as required by the present claims. However, Noguchi et al. do disclose alkoxyphenyl groups as substituents for the polymers.

Applicant further argues that Examples 3 to 6, 8, 9, 12 and 15 to 20 as set forth in the present specification demonstrate the favorable effect of using naphthylene groups having an alkoxyaryl substituent. It is not clear what favorable effect is considered to be demonstrated by these examples. Examples 3 to 6, 8, 9, 12 and 15 to 20 utilize polymeric fluorescent substances 4 to 7, 9, 10, 13 and 16 to 21, respectively. As stated on page 10 of the Office action mailed August 09, 2005, it is the examiner's position that the data set forth in the specification do not demonstrate superior/unexpected results commensurate in scope with the present claims compared to the applied prior art. The polymeric fluorescent substances used in Examples 3 to

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6, 8, 9, 12 and 15 to 20 have a fluorescent strength in the range of 0.09 (for polymeric fluorescent substance 4 of Example 3) to 2.11 (for polymer fluorescent substance 6 of Example 5). Based on the examples, the presence of an alkoxyphenyl substituent on a naphthylene group cannot be said to necessarily improve fluorescent strength since some exemplary polymers which do not comprise an alkoxyphenyl substituent on a naphthylene group have greater fluorescent strength than some of the exemplary polymers comprising the alkoxyphenyl substituent. For example, polymeric fluorescent substances 8, 11, 12, 14 and 15 of Examples 7, 10, 11, 13 and 14, which do not meet the limitations of any of the present claims, have a fluorescent strength greater than the fluorescent strength of polymeric fluorescent substance 4 of Example 3, which does meet the limitations of present claim 1. Polymeric fluorescent substance 11 of Example 10 (outside the scope of the present claims) has a fluorescent strength greater than the fluorescent strength of twelve of the thirteen polymeric fluorescent substances which meet the limitations of present claim 1.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
April 29, 2006



MARIE YAMNITZKY  
PRIMARY EXAMINER

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